forest management note

Note No. 15 Northern Forest Research Centre Edmonton, Alberta

SOME INSECT PESTS OF FOREST TREE NURSERIES IN THE CANADIAN PRAIRIES

The realization that Canada's forests are not limitless and are severely depleted has resulted in more emphasis being placed on reforestation, with a consequent increase in the demand for nursery seedlings. Seedling production has been hampered by insect pests, which either kill the seedlings or reduce their vigor when outplanted. Furthermore, the distribution of infested nursery stock could cause the spread of these pests to other areas. Several insect pests have been observed over the past few years in tree nurseries in the Canadian prairies. To assist nurseries, this note presents a brief description of the damage observed, identification of the insect pest, and suggestions for chemical control, if required.

THE PYRALID MOTH *Nomophila nearctica* Munroe

Referred to as the celery webworm because it disfigures celery destined for market, this insect is widely distributed in Canada. Although the larvae feed on numerous low plants such as clovers, grasses, and celery, they have also been reported feeding on 10-week-old white spruce seedlings that were grown in Paperpot 408 containers at the Prince Albert Forest Nursery in Saskatchewan and on first-year red spruce and white spruce seedlings in New Brunswick. The pale reddish brown larva (Fig. 1) with a black head and black tubercles on the body cuts seedlings off at ground level and drags them to a burrow to feed on them. The burrows, which are frequently located at the edge of the tray where the soil is loose, are not necessarily in the same tray where the seedlings were cut. Damage by *N. nearctica* is indicated by patches of seedlings severed at ground level and parts of seedlings in a tray (Fig. 2). The

Figure 1. Larva of *Nomophila nearctica*.

Figure 2. Seedlings severed at ground level by *N. nearctica*.

adult (Fig. 3), dull brown with black markings, appears from late May to early October, which suggests that there is more than one generation a year. The insect appears to overwinter in the larval stage.

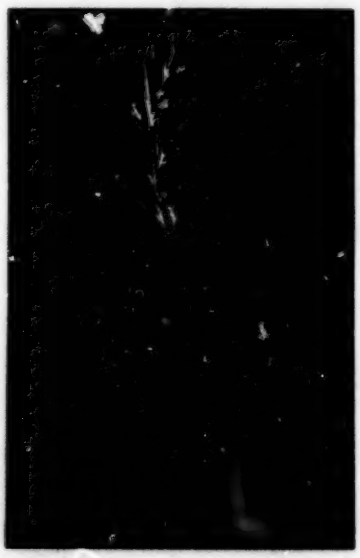
Infestations by this insect are sporadic, and diazinon has been used for control. The directions by the manufacturer should be followed and all precautions observed.

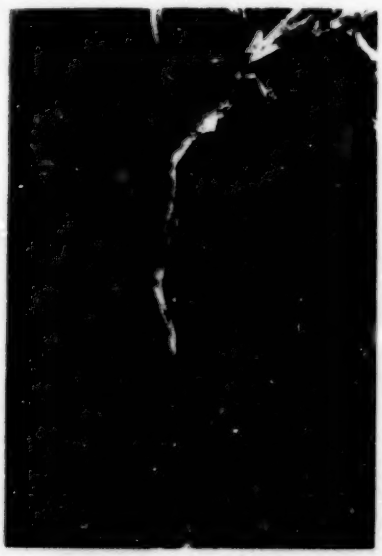
Figure 3. Adult of *N. nearctica*.

A STEM GIRDLER, possibly *Tipula* sp.

Some container-grown white spruce seedlings at the Pine Ridge Forest Nursery, Smoky Lake, Alberta, and the Pineland Provincial Forest Nursery, Hadashville, Manitoba, have shown signs of stem girdling above and below ground (Figs. 4, 5). The girdled seedlings had brown needles as a result of water not being transported to the shoot. The damage is caused by larvae of a crane fly which are cylindrical with heads that are retractable. Attempts to identify the species causing this damage have been unsuccessful to date, so anyone seeing these crane fly larvae girdling seedlings in the nursery is urged to send both the insects and seedling to the Northern Forest Research Centre for examination and identification. Empty crane fly pupal cases have been observed with damaged seedlings in early July 1982 at the Pine Ridge Nursery suggesting that the larvae are active in June.

Until the insect causing the girdling of the seedlings is identified, no control can be recommended.





Figures 4 and 5. Seedlings girdled above and below ground level, probably by *Tipula* sp.

A ROOT APHID, *Asiphum* sp.

Small colonies of wingless aphids (Fig. 6) covered with cottony wax (Fig. 7) have been observed feeding on the mycorrhizae of container-grown white spruce in the Pine Ridge Forest Nursery. No damage by this mycorrhizal-feeding aphid has been observed to date. In the past this root aphid was referred to as *Rhizomaria piceae* (Hartig), but *Rhizomaria* is now known to be a synonym of *Asiphum*, although the species on spruce is not known. The life cycle of aphids is quite complex and involves winged and wingless adults, the production of several generations a year, and overwintering in the egg stage.

No control is recommended.

Figure 6. An aphid, *Asiphum* sp., covered with cottony wax.

Figure 7. Cottony wax of *Asiphum* sp. on container-grown white spruce.

THE ADELGID *Pineus coloradensis* (Gillette)

Infestations of young nursery trees by this adelgid were noted in the Pine Ridge Forest Nursery. Conspicuous, dense, cottony wax secretions were evident on the twigs and stems of 3-0 lodgepole pine seedlings (Fig. 8). The foliage of heavily attacked trees turns yellowish. The slender, yellowish crawlers beneath the cottony wax measure 0.27-0.46 mm in length. This adelgid has a complex life cycle, but unlike some species in this group, it does not alternate between host trees. The insect overwinters in the nymphal state.

The use of diazinon has controlled this insect.

Figure 8. Cottony wax produced by the adelgid *Pineus coloradensis* on the stem of a lodgepole pine seedling.

THE PILL BEETLE *Tylicus subcanus* Leconte

An infestation of the pill beetle, *Tylicus subcanus* Lec., was observed in beds of 3-0 white spruce seedlings at the Big River Tree Nursery, Big River, Saskatchewan. Black larvae (Fig. 9) measuring 7.0-9.0 mm were observed swarming over the moss and between seedlings. It was feared that these pill beetles would damage the seedlings, but studies at the Northern Forest Research Centre indicate that the larvae feed only on the moss, *Ceratodon purpureus* (Hedw.) Brit., which grew in great abundance in the nursery beds. Although the pill beetles did not damage the seedlings, they bothered workers weeding in the nursery beds. Larvae of the pill beetles were most abundant from late July to late August. The adults (Fig. 10) are black, measure 4.5 mm in length, and apparently overwinter in this stage.

Since no damage to seedlings was observed, no control measure is recommended for this insect.

Figure 9. Larva of the pill beetle, *Tylicus subcanus*.

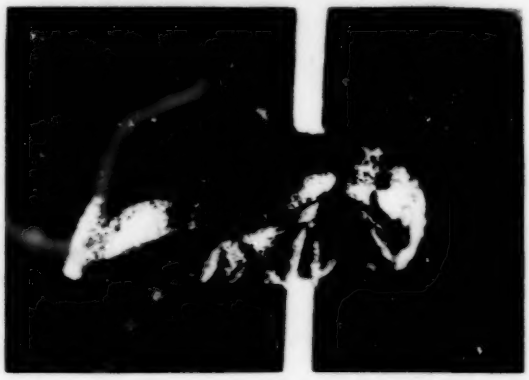


Figure 10. Adult of the pill beetle, *T. subcanus*.

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